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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,361	06/20/2003	Jean-Marie Andrieu	1187-R-02	7112

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IP GROUP OF DLA PIPER RUDNICK GRAY CARY US LLP
1650 MARKET ST
SUITE 4900
PHILADELPHIA, PA 19103

EXAMINER	
LE, EMILY M	

ART UNIT	PAPER NUMBER
1648	

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/600,361	ANDRIEU ET AL.	
	Examiner	Art Unit	
	Emily Le	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *43-47 and 51-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *43-47 and 51-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/01/2006 has been entered.

Status of Claims

2. Claims 1-42 and 48-50 are cancelled. Claims 52-56 are added. Claims 43-47 and 51-56 are pending and under examination.

Claim Objections

3. Applicant is advised that should claim 44 be found allowable, claim 51 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 56 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

The claim recites the limitation "about 10 nM". This limitation, particularly the term "about" is not supported (e.g., express, implicit, or inherent) by the disclosure. In the instant, the Office notes that the limitation 10 nM has adequate support in the specification; however, variations of 10 nM—as encompassed by the recitation "about 10 nM" is not fully supported by the disclosure. Thus, in the absence of adequate description supporting the full breadth of the cited limitation, the claim fails to comply with the written description requirement.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 43 and 45-47 are rejected under 35 U.S.C. 102(e) as being anticipated by Lisziewicz et al. (U.S. PreGrant Pub No. 20030095988).

In response to the rejection set forth in the previous office action, Applicant submits that Lisziewicz et al. does not anticipate the claimed invention because the composition of Lisziewicz et al. is not a pharmaceutical composition. Specifically, Applicant asserts that the composition described by Lisziewicz et al. may indeed contain harmful toxic or harmful ingredients, e.g., the composition of Lisziewicz et al. may contain RPMI 1640 cell culture medium, which contains 10% fetal calf serum, phenol red, glutathione and HEPES, all of which are considered harmful by the FDA. Applicant further asserts that mere disclosure of solutions for isolating and resuspending PBMCs is not the same as disclosing a pharmaceutically acceptable carrier. Applicant further submit that the composition of Lisziewicz et al. does not contain an inactivated human immunodeficiency virus that is chemically inactivated by 2,2'-dithiopyridine, as required by the amended claims. Applicant also submits a declaration by Louis Lu to establish that compositions comprising heat inactivated HIV pulsed with dendritic cells, like that of Lisziewicz et al., do not kill HIV infected cells.

Applicant's submission has been considered, and is addressed below.

Claims 43 and 45-47 are directed to a composition comprising an antigen presenting cell pulsed with an inactivated non-recombinant human immunodeficiency virus (HIV) and a pharmaceutically acceptable carrier. The claims require that the inactivated non-recombinant HIV be chemically inactivated by 2,2'-dithiopyridine (also known as Aldrithiol-2 (AT-2)), and the composition expands in vivo expression of virus-

specific CD8+ T cells, and said virus-specific CD8+ cells kill HIV-infected cells. Claim 45 limits the antigen presenting cell to a dendritic cell, which is later specified as an autologous dendritic cell by claim 46 and a monocyte-derived dendritic cell by claim 47.

Lisziewicz et al. teaches composition comprising an antigen presenting cell pulsed with an inactivated non-recombinant human immunodeficiency virus (HIV) and a pharmaceutically acceptable carrier. The antigen presenting cell present in the composition of Lisziewicz et al. is autologous monocyte-derived dendritic cell. Lisziewicz et al. teaches a composition that is the same as the claimed composition. Thus, Lisziewicz et al. teaches the claimed composition. Hence, Lisziewicz et al. anticipates the claimed invention.

It is noted that the claims require that the inactivated non-recombinant HIV be chemically inactivated by 2,2'-dithiopyridine (also known as Aldrithiol-2 (AT-2)); however, MPEP § 2113 [R-1] sets forth: [E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. [emphasis added] The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted) The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be

expected to impart distinctive structural characteristics to the final product. See, e.g., In re Garnero, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979).

In the instant, the product of interest is inactivated human immunodeficiency virus. And Lisziewicz et al. teaches this product. The product of Lisziewicz et al. is inactivated human immunodeficiency virus. Thus, the product of Lisziewicz et al. is the same as the product instantly recited in the claim(s). Furthermore, the Office finds that inactivation of the virus using 2,2'-dithiopyridine, as recited in the claim(s), does not impart any distinctive structural characteristic to the final product, inactivated human immunodeficiency virus. The Office also notes that Applicant teaches that any one of known methods of inactivating HIV can be use. [See paragraph 0085]

It is further noted that the claims require the composition to expands in vivo expression of virus-specific CD8+ T cells, and said virus-specific CD8+ cells kill HIV-infected cells; however, MPEP § 2112 [R-3] (I) provides: [T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." Atlas Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). In In re Crish, 393 F.3d 1253, 1258, 73 USPQ2d 1364, 1368 (Fed. Cir. 2004), the court held that the claimed promoter sequence obtained by sequencing a prior art plasmid that was not previously sequenced was anticipated by the prior art plasmid which

necessarily possessed the same DNA sequence as the claimed oligonucleotides. The court stated that "just as the discovery of properties of a known material does not make it novel, the identification and characterization of a prior art material also does not make it novel." Id.

In the instant, while it may be true that Applicant discovers that the claimed composition expands *in vivo* expression of virus-specific CD8+ T cells, and said virus-specific CD8+ cells kill HIV-infected cells; however, this discovery does not make the composition patentable over the composition of Lisziewicz et al. Lisziewicz et al. teaches a composition that is the same as instantly claimed. The composition of Lisziewicz et al. is the claimed composition. Hence, Lisziewicz et al. does not need to teach that the composition expands *in vivo* expression of virus-specific CD8+ T cells, and said virus-specific CD8+ cells kill HIV-infected cells to anticipate the claimed invention. The composition of Lisziewicz et al. would have the same properties or functions recognized by Applicant.

Additionally, the Office has considered the Declaration of Louis Lu; however, it is not found persuasive. In assessing the weight to be given expert testimony, the examiner may properly consider, among other things, 1) the nature of the fact sought to be established, 2) the strength of any opposing evidence, 3) the interest of the expert in the outcome of the case, and 4) the presence or absence of factual support for the expert's opinion. See Ex parte Simpson, 61 USPQ2d 1009 (BPAI 2001), Cf. Redac Int'l. Ltd. v. Lotus Development Corp., 81 F.3d 1576, 38 USPQ2d 1665 (Fed. Cir. 1996),

Paragon Podiatry Lab., Inc. v. KLM Lab., Inc., 948 F.2d 1182, 25 USPQ2d 1561, (Fed. Cir. 1993).

1) the nature of the fact sought to be established: compositions comprising heat inactivated HIV pulsed with dendritic cells **do not kill** HIV-infected cells.

2) the strength of any opposing evidence: Figure A, presented as part of Lu's declaration, shows that heat-inactivated HIV pulsed dendritic cells **do kill** HIV-infected cells.

3) the interest of the expert in the outcome of the case: Louis Lu is one of the listed inventor for this claimed invention.

4) the presence or absence of factual support for the expert's opinion: Figure A is submitted with the declaration. Lu states that Figure A shows that the percent of HIV gag-specific lysis affected by the heat-inactivated HIV pulsed dendritic cells was essentially the same as that affected by dendritic cells alone.

In the instant, the Office finds that Figure A establishes that percent of HIV gag-specific lysis caused by heat-inactivated HIV pulsed dendritic cells is not the same as the percent of HIV gag-specific lysis caused by dendritic cells alone, as evidenced by Lu's statement and Figure A. Lu states: the percent of HIV gag-specific lysis affected by the heat-inactivated HIV pulsed dendritic cells was **essentially the same** as that affected by dendritic cells alone. [emphasis added] And Figure A shows that heat-inactivated HIV pulsed dendritic cells do kill HIV-infected cells. Thus, heat-inactivated HIV pulsed dendritic cells has a different activity than that of dendritic cells alone.

Thus, in view of the evidence provided, the declaration of Louis Lu fails to establish that the composition of Lisziewicz et al. does not expands *in vivo* expression of virus-specific CD8+ T cells, and said virus-specific CD8+ cells kill HIV-infected cells.

In response to Applicant's submission that the composition of Lisziewicz et al. is not a pharmaceutical composition, which has been considered but is not found persuasive. In the instant, even if the composition of Lisziewicz et al. does contain RPMI 1640, the Office considers RPMI 1640 as a pharmaceutically acceptable carrier. The Office's position regarding the use of RPMI 1640 as a pharmaceutically acceptable carrier is further substantiated by Applicant's disclosure. Specifically, Applicant teaches the administration of inactivated virus pulsed autologous dendritic cells suspended in RPMI 1640 culture medium to macaques. In the instant, Applicant used RPMI 1640 culture medium as a carrier for inactivated virus pulsed autologous dendritic cells. And since the inactivated virus pulsed autologous dendritic cells suspended in RPMI 1640 culture medium is suitable for administration to macaques, the use of RPMI 1640 is considered as a pharmaceutically acceptable carrier.

8. Claims 43 and 45-47 are rejected under 35 U.S.C. 102(b) as being anticipated by Buseyne et al.[1]

The significance of claims 43 and 45-47 are provided above.

Buseyne et al. teaches a composition comprising an antigen presenting cell pulsed with an inactivated non-recombinant human immunodeficiency virus (HIV) and a pharmaceutically acceptable carrier. Buseyne et al. inactivated non-recombinant

human immunodeficiency virus (HIV) using 2,2'-dithiopyridine (also known as Aldrithiol-2 (AT-2)). The antigen presenting cell that Buseyne et al. teaches is autologous monocyte derived dendritic cell. [See CTL assays section, page 349 of Buseyne et al.] In the instant, Buseyne et al. teaches a composition that is the same as claimed. Thus, Buseyne et al. anticipates the claimed invention.

It is noted that the claims require the composition to expands in vivo expression of virus-specific CD8+ T cells, and said virus-specific CD8+ cells kill HIV-infected cells; however, MPEP § 2112 [R-3] (I) provides: [T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." Atlas Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). In In re Crish, 393 F.3d 1253, 1258, 73 USPQ2d 1364, 1368 (Fed. Cir. 2004), the court held that the claimed promoter sequence obtained by sequencing a prior art plasmid that was not previously sequenced was anticipated by the prior art plasmid which necessarily possessed the same DNA sequence as the claimed oligonucleotides. The court stated that "just as the discovery of properties of a known material does not make it novel, the identification and characterization of a prior art material also does not make it novel." Id.

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[1] Buseyne et al. MHC-I-restricted presentation of HIV-1 virion antigens without viral replication. Nature Medicine, March 2001, Vol. 7, No. 3, pages 344-349.

In the instant, while it may be true that Applicant discovers that the claimed composition expands *in vivo* expression of virus-specific CD8+ T cells, and said virus-specific CD8+ cells kill HIV-infected cells; however, this discovery does not make the composition patentable over the composition of Buseyne et al. Buseyne et al. teaches a composition that is the same as instantly claimed. The composition of Buseyne et al. is the claimed composition. Hence, Buseyne et al. does not need to teach that the composition expands *in vivo* expression of virus-specific CD8+ T cells, and said virus-specific CD8+ cells kill HIV-infected cells to anticipate the claimed invention. The composition of Buseyne et al. would have the same properties or functions recognized by Applicant.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. The rejection of claims 44 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lisziewicz et al. in view of Grovit-Ferbas et al. in further view of Cohen et al. is withdrawn in view of Applicant's submission.

11. Claims 52-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buseyne et al., as applied above to claim 43, in view of Lu et al.[2]

[2] Lu et al. HIV protease inhibitors restore impaired T-cell proliferative response in vivo and in vitro: a viral-suppression-independent mechanism. Blood, Jul 2000; Vol. 96, 250 - 258.

The claims require the composition to further comprise an adjuvant. The adjuvant is later limited to a protease inhibitor by claim 53, which depends on claim 52. The protease inhibitor is later limited indinavir by claim 54, which depends on claim 53. Claim 55, which depends on claim 54, later requires that the composition comprise a non-antiviral concentration of indinavir. And claim 56 limits the non-antiviral concentration to 10 nM.

The significance of Buseyne et al. is provided above. As presented above, Buseyne et al. teaches the composition of claim 43. It should be noted that Buseyne et al. teaches that the composition is a potent stimulator of CTL response.

Buseyne et al. does not teach the composition with 10 nM of indinavir. However, the deficiency of Buseyne et al. is fully compensated by Lu et al. Lu et al. teaches that indinavir direct up-regulate proliferation and down regulate apoptosis of T cells. [Paragraph bridging pages 247-248.]

Thus, would have been prima facie obvious for one of ordinary skill in the art to combine the teachings of Buseyne et al. and Lu et al. One of ordinary skill in the art would have been motivated to do so to optimize CTL response against infection with human immunodeficiency virus. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because indinavir stimulates the proliferation of T cells, and the composition of Buseyne et al. stimulates potent CTL response.

It is recognized that claims require the composition to contain non-antiviral concentration of indinavir, specifically 10 nM. In the instant, Lu et al. teaches that the

extent in which indinavir up-regulate proliferation and down regulate apoptosis of T cells varies at different concentrations of indinavir. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to use any concentrations of indinavir, particularly since Lu et al. establishes that indinavir at various concentrations, ranging from .1nM to 1000 nM, stimulates direct up-regulate proliferation and down regulate apoptosis of T cells. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to determine the optimum concentration to optimize the proliferation of T cells. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because the determination of workable ranges or optimal value is routine practiced in the art.

12. Claims 44 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buseyne et al., as applied above to claim 43, in view of Lieberman et al.[3]

Claims 44 and 51, both depend on claim 43, require the inactivated human immunodeficiency virus to be an inactivated autologous HIV.

The significance of Buseyne et al. is provided above. Buseyne et al. does not teach the use of autologous HIV.

However, at the time the invention was made, it is well known in the vaccinology art that viral mutation of the epitopic sequence recognized by HIV-specific CTL can sidestep CTL recognition, as evidenced by Lieberman et al. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made

to use an autologous HIV epitopic sequence. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to induce a CTL response against HIV. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because CTL recognition is important to controlling HIV infectivity.

Double Patenting

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory

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[3] Lieberman et al. Dressed to kill? A review of why antiviral CD8 T lymphocytes fail to prevent

double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 43-47 and 51-56 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 11/138171 in view of Buseyne et al., Lu et al., and Lieberman et al.

Claim 1 of the conflicting patent application is directed at a composition comprising a demethylating agent and an antigen.

The difference between claims 43-47 and 51-56 of the instant application and claim 1 of the conflicting application is: claim 1 of the conflicting application requires the composition to comprise a demethylating agent. However, it should be noted that claims 43-47 and 51-56 are open to the inclusion of a demethylating agent.

The other difference between claims 43-47 and 51-56 of the instant application and claim 1 of the conflicting application is: claim 1 of the conflicting application does not require the antigen to comprise autologous monocyte-derived dendritic cell pulsed with an inactivated non-recombinant human immunodeficiency virus (HIV) and a pharmaceutically acceptable carrier, wherein the inactivated non-recombinant HIV be chemically inactivated by 2,2'-dithiopyridine (also known as Aldrithiol-2 (AT-2)), and the

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progressive immunodeficiency in HIV-1 infection. Blood, September 2001, Vol. 98, No. 6, 1667-1677.

composition expands in vivo expression of virus-specific CD8+ T cells, and said virus-specific CD8+ cells kill HIV-infected cells.

However, the deficiency noted in claim 1 of the conflicting application is fully compensated by Buseyne et al. Buseyne et al. teaches an antigen comprising autologous monocyte-derived dendritic cell pulsed with an inactivated non-recombinant human immunodeficiency virus (HIV) and a pharmaceutically acceptable carrier, wherein the inactivated non-recombinant HIV be chemically inactivated by 2,2'-dithiopyridine (also known as Aldrithiol-2 (AT-2)). The antigen of Buseyne et al. is a potent stimulator of T cell response. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to use the antigen of Buseyne et al. with the composition of claim 1 of the conflicting patent application. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to induce a CTL response against infection with human immunodeficiency virus. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because the antigen of Buseyne et al. a potent stimulator of T cell response.

Additionally, while Buseyne et al. does not teach the use of autologous HIV; however, at the time the invention was made, it is well known in the vaccinology art that viral mutation of the epitopic sequence recognized by HIV-specific CTL can sidestep CTL recognition, as evidenced by Lieberman et al. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to use an autologous HIV epitopic sequence. One of ordinary skill in the art at the time the

invention was made would have been motivated to do so to induce a CTL response against HIV. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because CTL recognition is important to controlling HIV infectivity.

The difference between claims 43-47 and 51-56 of the instant application and claim 1 of the conflicting application is: claim 1 of the conflicting application does not require the composition to comprise 10 nM of indinavir.

While, Buseyne et al. teaches an antigen that is a potent stimulator of T cell response, Buseyne et al. does not teach the composition with 10 nM of indinavir.

Buseyne et al. does not teach the composition with 10 nM of indinavir. However, the deficiency of Buseyne et al. is fully compensated by Lu et al. Lu et al. teaches that indinavir direct up-regulate proliferation and down regulate apoptosis of T cells. [Paragraph bridging pages 247-248.]

Thus, would have been prima facie obvious for one of ordinary skill in the art to combine the teachings of Buseyne et al. and Lu et al. One of ordinary skill in the art would have been motivated to do so to optimize CTL response against infection with human immunodeficiency virus. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because indinavir stimulates the proliferation of T cells, and the composition of Buseyne et al. stimulates potent CTL response.

It is recognized that claims require the composition to contain non-antiviral concentration of indinavir, specifically 10 nM. In the instant, Lu et al. teaches that the

extent in which indinavir up-regulate proliferation and down regulate apoptosis of T cells varies at different concentrations of indinavir. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to use any concentrations of indinavir, particularly since Lu et al. establishes that indinavir at various concentrations, ranging from .1nM to 1000 nM, stimulates direct up-regulate proliferation and down regulate apoptosis of T cells. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to determine the optimum concentration to optimize the proliferation of T cells. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because the determination of workable ranges or optimal value is routine practiced in the art.

This is a provisional obviousness-type double patenting rejection.

15. Claims 43-47 and 51-56 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2, 7 and 13 of copending Application No. 11/243094 in view of Lu et al., Lieberman et al., and Buseyne et al.

The difference between claims 43-47 and 51-56 of the instant application and claim 13 of the conflicting application is: claim 13 of the conflicting application does not require the inactivated HIV to be inactivated by aldithriol-2.

However, claim 7 of the conflicting patent application suggests the use of aldithriol-2 to inactivate the virus. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to use aldithriol-2. One of

ordinary skill in the art at the time the invention was made would have been motivated to do so to inactive HIV. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because aldithriol-2 inactivates HIV.

The other difference between claims 43-47 and 51-56 of the instant application and claim 13 of the conflicting application is: claim 13 of the conflicting application does not require the composition to comprise a pharmaceutically acceptable carrier.

However, claim 2 of the conflicting patent application suggests the use of a pharmaceutically acceptable carrier for the composition. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to include a pharmaceutically acceptable carrier with the composition. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to facilitate storage or delivery of the composition. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because the use of pharmaceutically acceptable carrier with pharmaceuticals is well practiced in the art.

The difference between claims 43-47 and 51-56 of the instant application and claim 13 of the conflicting application is: claim 13 of the conflicting application does not require the use of autologous HIV.

However, at the time the invention was made, it is well known in the vaccinology art that viral mutation of the epitopic sequence recognized by HIV-specific CTL can sidestep CTL recognition, as evidenced by Lieberman et al. Thus, it would have been

prima facie obvious for one of ordinary skill in the art at the time the invention was made to use an autologous HIV epitopic sequence. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to induce a CTL response against HIV. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because CTL recognition is important to controlling HIV infectivity.

The other difference between claims 43-47 and 51-56 of the instant application and claim 13 of the conflicting application is: claim 13 of the conflicting application does not require the dendritic cell to be autologous.

However, Buseyne et al. teaches the use of autologous dendritic cells pulsed with inactivated HIV to stimulate a potent MHC class-I-restricted T cell response. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to use used autologous dendritic cells. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to stimulate a potent MHC class-I-restricted T cell response.

The last difference between claims 43-47 and 51-56 of the instant application and claim 1 of the conflicting application is: claim 13 of the conflicting application does not require the composition to comprise 10 nM of indinavir.

However, Lu et al. teaches that indinavir direct up-regulate proliferation and down regulate apoptosis of T cells. [Paragraph bridging pages 247-248.]

Thus, would have been prima facie obvious for one of ordinary skill in the art to include indinavir. One of ordinary skill in the art would have been motivated to do so to

optimize CTL response against infection with human immunodeficiency virus. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because indinavir stimulates the proliferation of T cells, and the composition of claim 13 of the conflicting patent application, as evidenced by Buseyne et al. stimulates potent CTL response.

It is recognized that claims require the composition to contain non-antiviral concentration of indinavir, specifically 10 nM. In the instant, Lu et al. teaches that the extent in which indinavir up-regulate proliferation and down regulate apoptosis of T cells varies at different concentrations of indinavir. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to use any concentrations of indinavir, particularly since Lu et al. establishes that indinavir at various concentrations, ranging from .1nM to 1000 nM, stimulates direct up-regulate proliferation and down regulate apoptosis of T cells. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to determine the optimum concentration to optimize the proliferation of T cells. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because the determination of workable ranges or optimal value is routine practiced in the art.

This is a provisional obviousness-type double patenting rejection.

Conclusion

16. No claims are allowed.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Le whose telephone number is (571) 272 0903. The examiner can normally be reached on Monday - Friday, 8 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bruce R. Campell can be reached on (571) 272-0974. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bruce R. Campell
Supervisory Patent Examiner
Art Unit 1648

E.Le 5/10/06

BRUCE R. CAMPELL, PH.D
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600